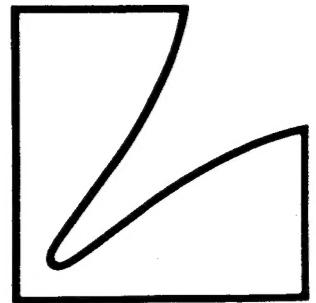


# SERVICE MANUAL



QUARTZ AUTOMATIC  
TURNTABLE

**PD291 / PX100**

PD291



PX100

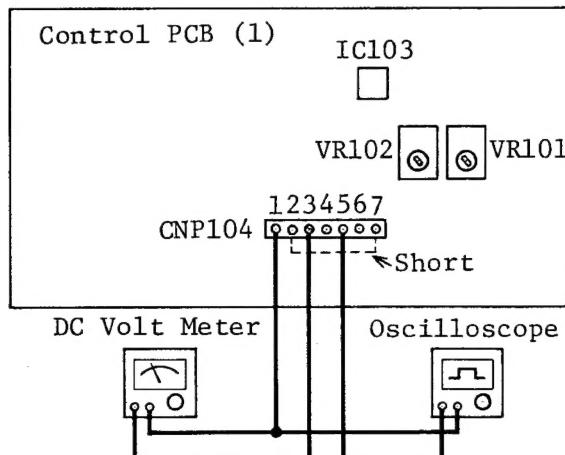


PD291 / PX100

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## Alignment Procedure



### (1) VR101 : DC Offset Adjustment on IC103 (4558)

1. Make Terminal No. 2 and No. 7 of CNP104 short.
2. Connect a DC volt meter in between Terminal No. 1 and No. 3 of CNP104
3. Adjust the semi-fixed resistor, VR101 to make the DC volt meter read the value within +100mV.

### (2) VR102 : Tone-Arm Speed Adjustment

1. Connect an oscilloscope in between Terminal No. 1 and No. 5 of CNP104.
2. Adjust the semi-fixed resistor, VR102 to make a wave form of the oscilloscope 2.7 to 5.5 sec.

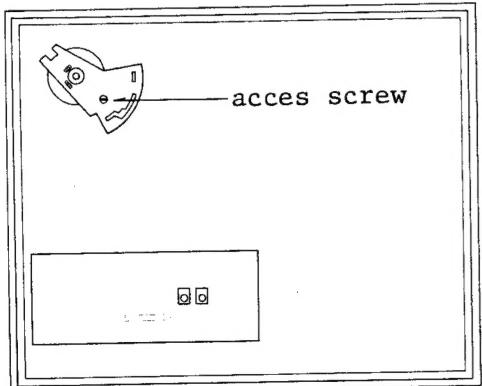
# Alignment Procedure

When an alignment is made on the lead-in position for a 30cm/33rpm disc, the lead-out position can be automatically fixed, too. In addition, both of the lead-in and lead out positions for a 17cm/45rpm disc can be adjusted at the same time.

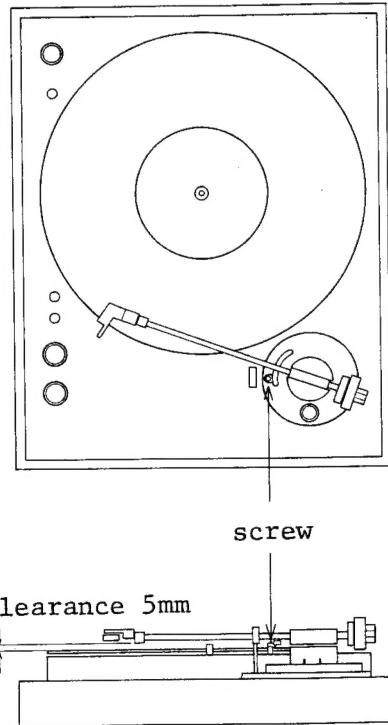
## AUTOMATIC LEAD-IN ADJUSTMENT

(Fig. 1)

Adjustment of the lead-in position is possible by means of the lead-in alignment screw on the arm-feeding assembly accessible from the bottom plate. Turn the acces screw in the clockwise direction, and the sensing point for the arm descent shifts outward, while a counter-clockwise turn moves the point inward.



---Fig. 1---



---Fig. 2---

## ADJUSTMENT OF STYLUS HEIGHT

(Fig. 2)

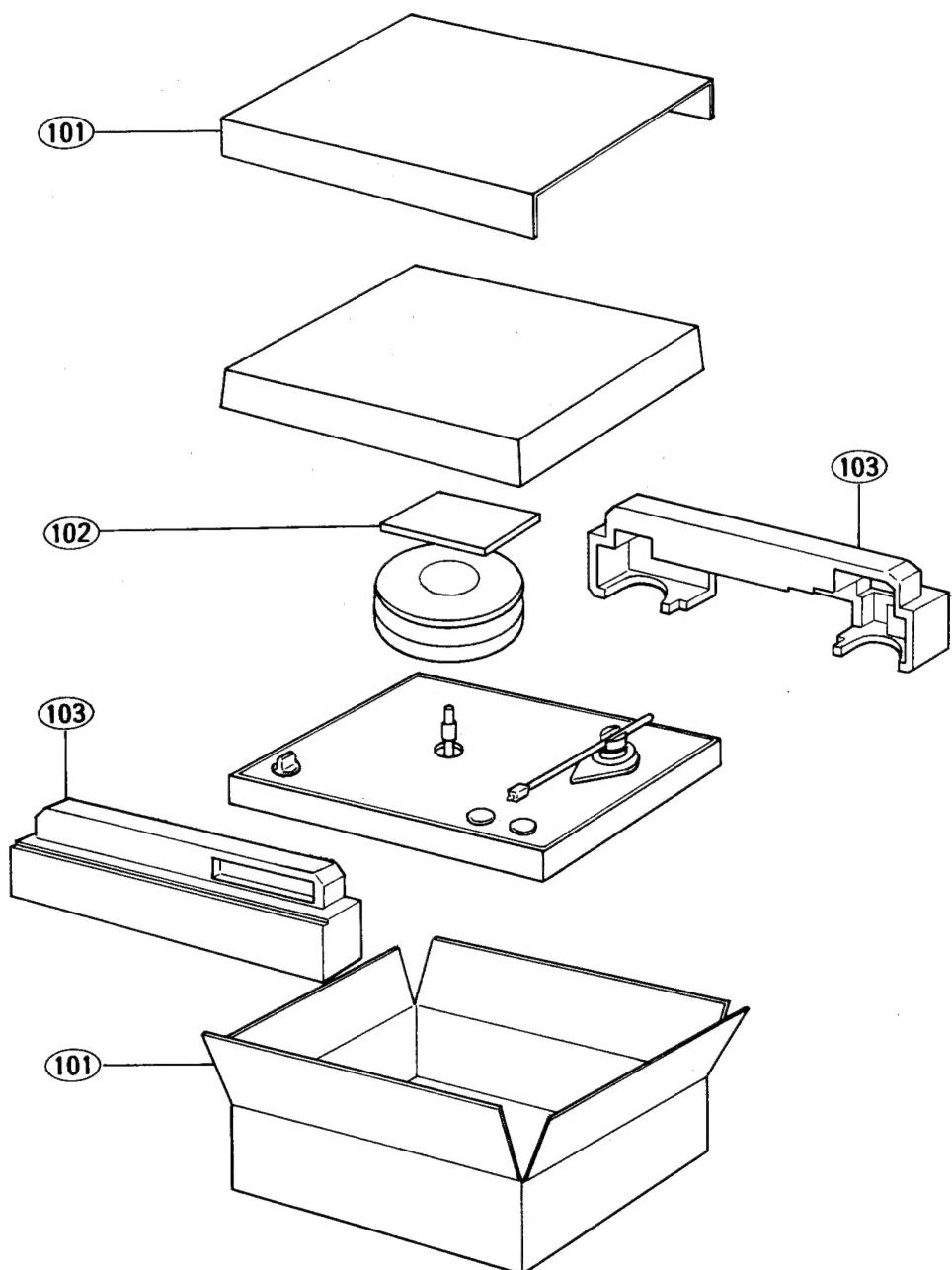
Place a disc on the platter and bring the tone-arm above the disc. The desired clearance is 5mm between the stylus tip and the disc surface. If necessary, turn the screw on the cueing platform in the clockwise direction to increase the clearance.

Your turn table features the automatic mechanism. In case an adequate clearance is not procured between the stylus and disc, the tone-arm may not return to the correct position of the arm-rest, therby damaging the stylus tip. Check this point carefully after the PD-291 (PX-100) is hooked up and made operational. Push the "up/down" button again. Return the tone-arm to the arm-rest and clamp it.

# Trouble Shooting

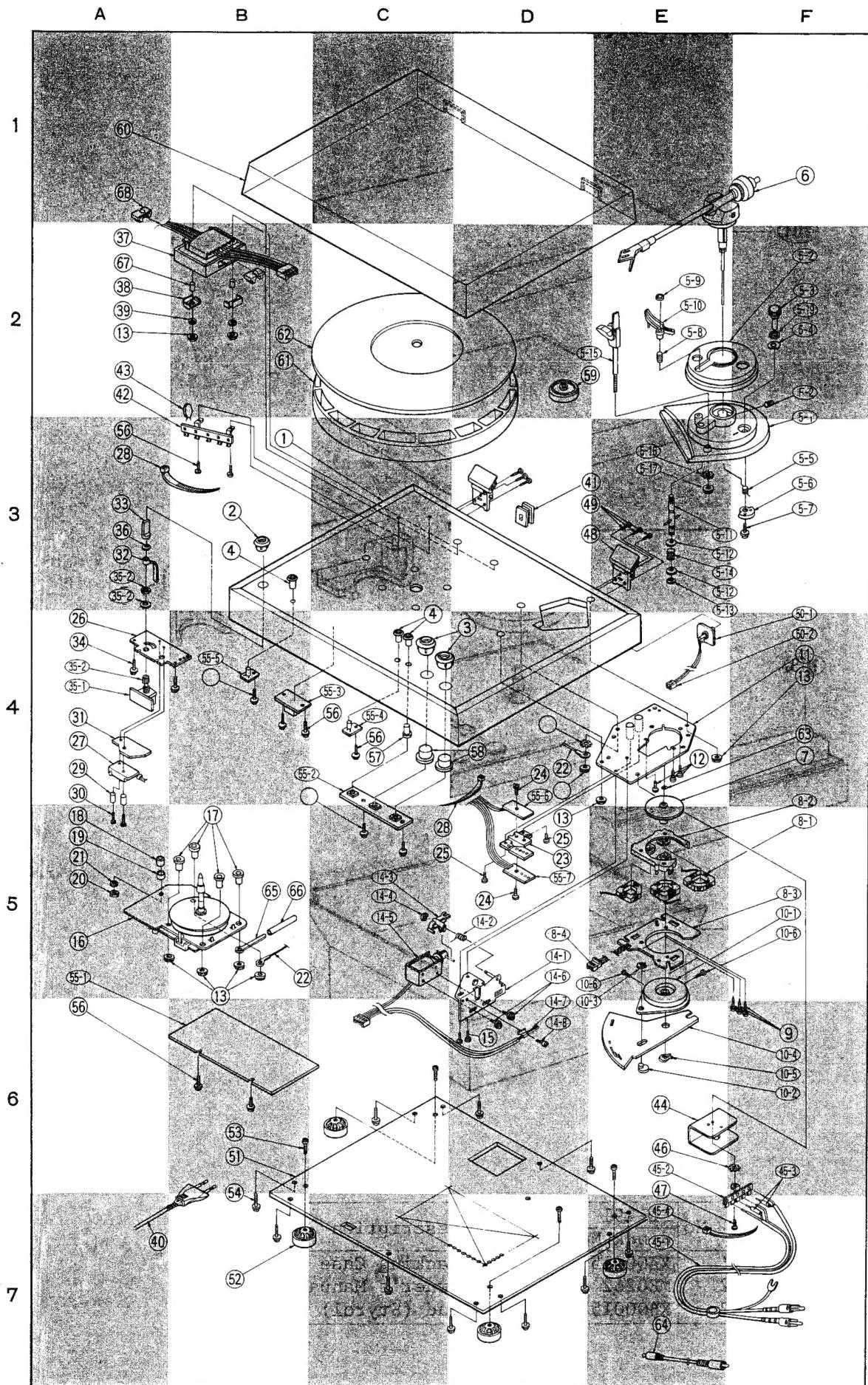
| Item No. | Symptoms   | Main Cause   | Remedy & Check   |
|----------|--|--|--|
| 1        | Tone-arm would not return to Arm-rest after power SW as been on. | * No reset differential input arises on Pin 26 of (Micro Computer) IC101.<br>* IC101 would neither oscillate.  | * Replace RL32, C110 or D105, or check either of these are properly soldered.<br>* Replace L101, or C109, or check either of these are properly soldered.                              |
| 2        | D.D. motor rotates while Tone-arm is on Arm-rest.                | * Collector of X107 is not low;<br>In case that base of X107 is over 0.6V:<br>In case that base of X107 is below 0.3V  | * Replace X107.<br><br>* Replace IC102.<br>* Check a wave form of Pin 21, 22 & 23 of IC101.  |
| 3        | Tone-arm would not function.                                     | * In case that voltage between Terminal 1 & 2 varies.<br><br>* In case that voltage between Terminal 1 & 2 would not vary:<br>Pin 5 of IC103 (4558) would not vary.              | * Put connector CNP103 into a right position and or replace D.D. tone-arm coil if broken.<br><br>* Put connector CNP103 into a right position.<br>* Check Pin 5 of IC102 (See Item 7.) |
| 4        | Tone-arm descends unvertically.                                  | * Pin 4 of IC102 varies and Pin 3 would not vary.<br><br>* Voltage of over +100mV arises at Output Terminal (Pin 1 ) of IC103.   | * Readjust VR101 (See Alignment Procedure) but if no adjustment is possible, replace IC103.  |
| 5        | Tone-arm would not come down.                                    | * Pin 11 of IC101 is high for about 1 sec.<br>* Pin 11 of IC101 remains low.   | * Replace X106. But if X106 is normal, adjust stroke of solenoid<br>* Find "High" among Input Terminals of IC101.  |
| 6        | Key input would not work.  | * Find a Terminal which remains high among Input Terminals of IC101, and if the terminal is found:<br><br>or if no terminal is found, no key input is acceptable after cue-down. | * Check the outside circuit of the terminal.<br>* Adjust Up Switch to make it "Low" at cue-down.   |
| 7        | Tone-arm is kept braked.   | * In case that Pin 5 of IC102 is high:<br>* In case that Pin 3 of IC102 varies when Tone-arm arm is manually moved and Pin 5 of IC102 is low;                                    | * Check the outside circuit of the Pin 5.<br>* Replace IC102.  |
| 8        | Positioning gap on lead-in and return.                           | * Gap with sector.<br><br>* Tone-arm descends unvertically.  | * Adjust the biased pin (See alignment procedure.)<br>* Readjust VR101 (See Alignment Procedure.)  |
| 9        | Tone-arm would not move smoothly.                                | * Input voltage of the transformer is low.<br>* Input voltage of the transformer is normal.  | * Readjust VR102 (See Alignment Procedure.)  |

## Packing Material Parts List



| Symbol No | PD-291   | PX-100   | Description    |
|-----------|----------|----------|----------------|
|           | Stock No | Stock No |                |
| 101       | XAQ0015  | XAQ0017  | Packing Case   |
| 102       | ME0262   | ME0265   | Owner's Manual |
| 103       | XBQ0015  | XBQ0015  | Pad (Styrol)   |

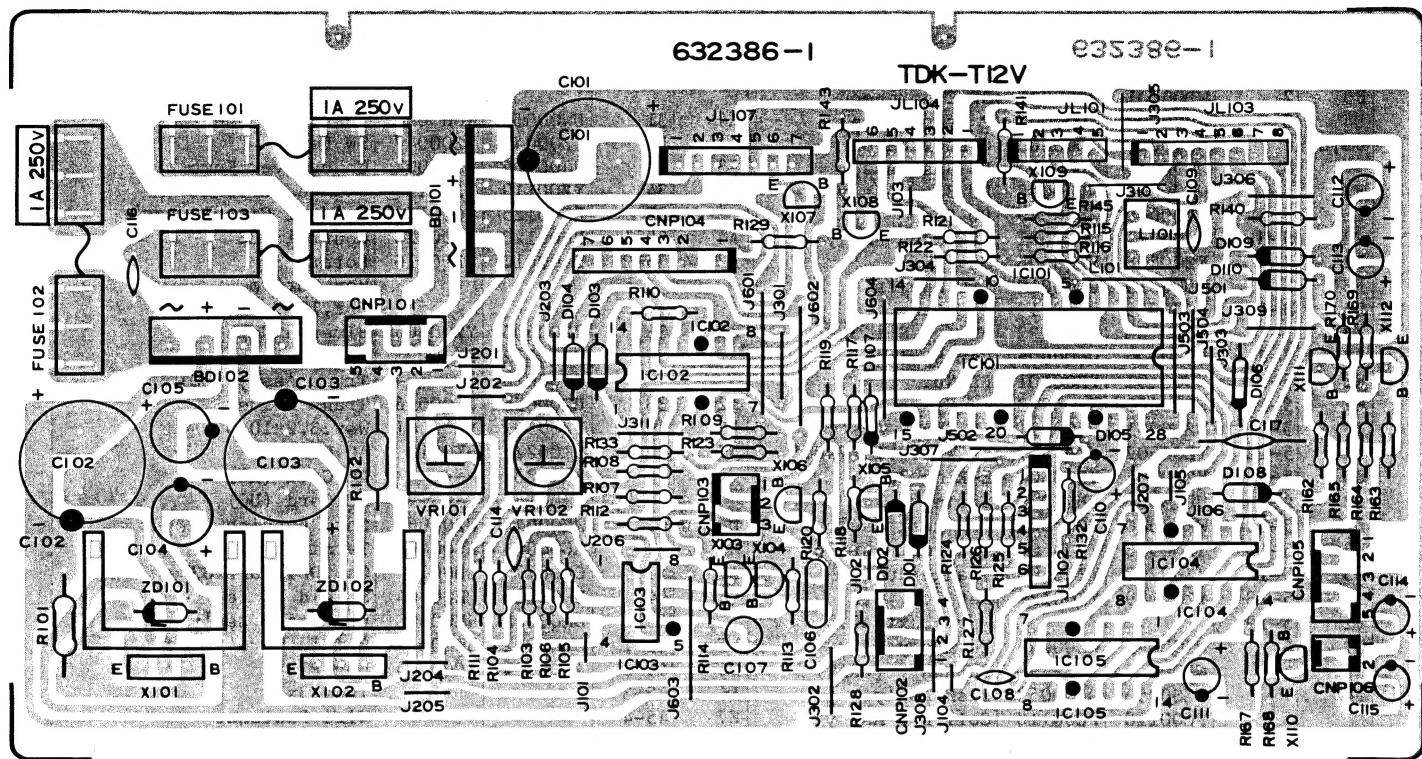
# Exploded View



# Explode View Parts List

| Index  | Symbol No. | PD-291    | PX-100    | Description         | Index    | Symbol No. | PD-291    | PX-100    | Description                |
|--------|------------|-----------|-----------|---------------------|----------|------------|-----------|-----------|----------------------------|
|        |            | Stock No. | Stock No. |                     |          |            | Stock No. | Stock No. |                            |
| B3     | 1          | WBQ0007   | WBQ0009   | Cabinet             | A4       | 30         | YZQ0118   | -----     | Scr.2x18                   |
| B3     | 2          | WDQ0001   | WDQ0001   | SP Escutcheon       | A4       | 31         | UWQ0010   | -----     | Scr.2x18 (UQ)              |
| D4     | 3          | WDQ0002   | WDQ0002   | P Escutcheon        | A3       | 32         | UZQ0047   | -----     | Insulator Sheet            |
| B3, C4 | 4          | WDQ0003   | WDQ0003   | C Escutcheon        | A3       | 33         | WJQ0004   | WJQ0004   | SW Lever                   |
|        | 5          | WDQ0005   | WDQ0005   | PU Base Ass'y       | A4       | 34         | YZQ0119   | YZQ0119   | Changeover Knob            |
| F2     | 5-1        | WDQ0048   | WDQ0048   | PU Base Ass'y 1     | A4       | 35         | PCQ0125   | PCQ0136D  | Flange Scr.3x12            |
| F2     | 5-2        | WDQ0049   | WDQ0049   | PU Cap              | A4       | 35-1       | PCQ0120   | PCQ0120   | Control Circuit Ass'y      |
| F2     | 5-3        | WJQ0021   | WJQ0021   | IFC Knob Ass'y      | A4       | 35-2       | SRQ0010   | SRQ0010   | Control PCB                |
| F2     | 5-4        | YZQ0508   | YZQ0508   | Wave Wsr.           | A3, A4   | -----      | -----     | -----     | Rotary SW                  |
| F3     | 5-5        | UUQ0019   | UUQ0019   | IFC Spring          | A3       | 36         | YZQ0505   | YZQ0505   | Hex.Nut 7/8                |
| F3     | 5-6        | UQQ0019   | UQQ0019   | IFC Cam             | A2       | 37         | PTQ0022   | PTQ0023   | Wsr.12x7.2x0.5             |
| F3     | 5-7        | YZQ0133   | YZQ0133   | Flange Scr.3x8      | A2       | 38         | PTQ0023   | -----     | Himeron Wsr.               |
| E2     | 5-8        | UUQ0005   | UUQ0005   | Cam Spring          | A2       | 39         | UZQ0056   | UZQ0056   | Trans Ass'y                |
| E2     | 5-9        | YZQ0101   | YZQ0101   | EL Nut              | A7       | 40         | YZQ0501   | YZQ0501   | Trans Holder               |
| E2     | 5-10       | WZQ0043   | WZQ0043   | EL Plate            | A2       | 40         | BK0022    | BK0018    | Wsr.3.2x10x0.5             |
| E3     | 5-11       | UZQ0051   | UZQ0051   | EL Shaft Ass'y      | A2       | 41         | BK0023    | -----     | AC Cord                    |
| E3     | 5-12       | YZQ0507   | YZQ0507   | Bs Wsr.3.15x7x0.5   | A2       | 42         | BK0018    | -----     | AC Cord (AG)               |
| E3     | 5-13       | YZQ0604   | YZQ0604   | E-Ring 2φ           | A7       | 41         | WZQ0046   | WZQ0060   | AC Cord (UQ)               |
| E3     | 5-14       | UUQ0020   | UUQ0020   | Spring              | A2       | 42         | AGQ0003   | AGQ0003   | Cord Bushing               |
| D2     | 5-15       | WZQ0040   | WZQ0040   | Arm Rest Ass'y      | A2       | 43         | CU0077    | CU0077    | Terminal Plate             |
| E3     | 5-16       | YZQ0506   | YZQ0506   | External Wsr.3φ     | E6       | 44         | UKQ0004   | UKQ0004   | Cap.DE7150FZ103P           |
| E3     | 5-17       | YZQ0703   | YZQ0703   | Flange Nut 3φ       | E6       | 45         | BKQ0008   | BKQ0008   | Shield Plate               |
| F2     | 5-18       | YZQ0129   | YZQ0129   | Set Scr.4x10        | E7       | 45-1       | BKQ0002   | BKQ0002   | Lug Plate Ass'y            |
| F2     | 5-19       | -----     | -----     | Wsr.6.2x12x0.5      | E6       | 45-2       | AGQ0004   | AGQ0004   | Shield Wire Ass'y          |
| F1     | 6          | WZQ0045   | WZQ0045   | PU Ass'y            | F6       | 45-3       | -----     | -----     | Lug Plate                  |
|        |            | WZQ0045A  | -----     | PU Ass'y (CRAK)     | E7       | 45-4       | -----     | -----     | Tube 3x14                  |
| F4     | 7          | UZQ0053   | UZQ0053   | Disk Ass'y          | E6       | 46         | YZQ0502   | YZQ0502   | Wire Fastener              |
|        | 8          | PCQ0118   | PCQ0118   | Coil PCB Ass'y      | E6       | 47         | YZQ0120   | YZQ0120   | External Wsr.3φ            |
| F5     | 8-1        | LAQ0045   | LAQ0045   | Coil                | E3       | 48         | UZQ0107   | UZQ0107   | Scr.3x8                    |
| F4     | 8-2        | LAQ0046   | LAQ0046   | Spool               | E3       | 49         | YZQ0130   | YZQ0130   | Hinge Ass'y                |
| F5     | 8-3        | PCQ0119   | PCQ0119   | Coil PCB            | E3       | 50         | BKQ0010   | BKQ0013   | Wood Scr.3.1x12            |
| D5     | 8-4        | -----     | -----     | Connector Ass'y     | F4       | 50-1       | ATQ0111   | ATQ0113   | Pin Jack Ass'y             |
| F6     | 9          | YZQ0128   | YZQ0128   | Tpg.Scr.3x16        | F4       | 50-2       | ASQ0015   | ASQ0014   | Pin Jack                   |
|        | 10         | UZQ0057   | UZQ0057   | Arm Rotor Ass'y 2   | B6       | 51         | WBQ0106   | WBQ0106   | Connector Ass'y 6          |
| F5     | 10-1       | UZQ0058   | UZQ0058   | Arm Rotor Ass'y     | B7       | 52         | WNQ0003   | WNQ0006   | Bottom Plate               |
| F6     | 10-2       | YZQ0801   | YZQ0801   | Eccentric Pin       | B6       | 53         | YZQ0131   | YZQ0131   | Foot                       |
| D6     | 10-3       | YZQ0601   | YZQ0601   | Bow E-Ring 3φ       | B7       | 54         | YZQ0132   | -----     | Bind Scr.4x10              |
| F6     | 10-4       | UZQ0054   | UZQ0054   | Slit Plate          |          | -----      | -----     | -----     | Flange Tpg.Scr.3x12        |
| F6     | 10-5       | YZQ0602   | YZQ0602   | Bow E-Ring 10φ      |          | -----      | -----     | -----     | Flange Tpg.Scr.3x16        |
| D5, F5 | 10-6       | YZQ0127   | YZQ0127   | Hex.Bolt 3x8        |          | 55         | PCQ0121   | PCQ0136   | Control Circuit Ass'y      |
| F4     | 11         | UAQ0005   | UAQ0005   | Sub Chassis Ass'y   |          | PCQ0137    | -----     | -----     | Control Circuit Ass'y (UQ) |
| E4     | 12         | YZQ0126   | YZQ0126   | Tpg.Scr.3x12        | A5       | 55-1       | PCQ0122   | PCQ0136A  | Control PCB                |
| A2etc  | 13         | YZQ0702   | YZQ0702   | Flange Nut 3φ       | PCQ0137A | -----      | -----     | -----     | Control PCB (UQ)           |
|        | 14         | UZQ0059   | UZQ0059   | Lifter Mecha.Ass'y  | C4       | 55-2       | PCQ0123   | PCQ0136B  | Control PCB                |
| D5     | 14-1       | UZQ0032   | UZQ0032   | Sol.Angle Ass'y     | PCQ0137B | -----      | -----     | -----     | Control PCB (UQ)           |
| D5     | 14-2       | UUQ0021   | UUQ0021   | Coil Spring         | C4       | 55-3       | PCQ0124   | PCQ0136C  | Control PCB                |
| C5     | 14-3       | UZQ0033   | UZQ0033   | EL Lever            | PCQ0137C | -----      | -----     | -----     | Control PCB (UQ)           |
| C5     | 14-4       | YZQ0603   | YZQ0603   | E-Ring 2φ           | C4       | 55-4       | PCQ0126   | PCQ0136E  | Control PCB                |
| C5     | 14-5       | AYQ0007   | AYQ0007   | Solenoid Ass'y      | PCQ0137E | -----      | -----     | -----     | Control PCB (UQ)           |
| D5     | 14-6       | YZQ0125   | YZQ0125   | Flange Scr.3x4      | B4       | 55-5       | PCQ0127   | PCQ0136F  | Control PCB                |
| D6     | 14-7       | SPQ0026   | SPQ0026   | Leaf SW Ass'y       | PCQ0137F | -----      | -----     | -----     | Control PCB (UQ)           |
| D6     | 14-8       | YZQ0124   | YZQ0124   | Scr.3x5             | D4       | 55-6       | PCQ0128   | PCQ0136G  | Control PCB                |
| D6     | 15         | YZQ0122   | YZQ0122   | Scr.2.6x5           | PCQ0137G | -----      | -----     | -----     | Control PCB (UQ)           |
| A5     | 16         | AMQ0008   | AMQ0008   | Motor DDM-522-QM-40 | D5       | 55-7       | PCQ0129   | PCQ0136H  | Control PCB                |
| B5     | 17         | UTQ0003   | UTQ0003   | Motor Column        | PCQ0137H | -----      | -----     | -----     | Control PCB (UQ)           |
| A5     | 18         | UTQ0004   | UTQ0004   | Motor Column 1      | A3etc    | 56         | YZQ0123   | YZQ0123   | Flange Tpg.Scr.3x8         |
| A5     | 19         | UTQ0005   | UTQ0005   | Motor Column 2      | C4       | 57         | WJQ0003   | WJQ0003   | Cut Button                 |
| A5     | 20         | YZQ0701   | YZQ0701   | Hex.Nut 3φ          | D4       | 58         | WJQ0002   | WJQ0002   | P Button                   |
| A5     | 21         | YZQ0504   | YZQ0504   | Fiver Wsr.3.2x8x1   | D2       | 59         | WZQ0302B  | WZQ0302B  | EP Adupter                 |
| B5, D4 | 22         | -----     | -----     | Earth Lead Ass'y    | A1       | 60         | WZQ0206   | WZQ0206   | Dust Cover                 |
| D5     | 23         | UZQ0055   | UZQ0055   | Sensor Holder       | B2       | 61         | UZQ0052   | UZQ0052   | Turn Table                 |
| D4, D5 | 24         | YZQ0121   | YZQ0121   | Tpg.Scr.3x6         | B2       | 62         | WZQ0047   | WZQ0047   | Turn Table Sheet           |
| C5, D5 | 25         | YZQ0117   | YZQ0117   | Tpg.Scr.3x10        | F4       | 63         | YZQ0503   | YZQ0503   | Vinyl Wsr.5.1x10x0.5       |
| A4     | 26         | UZQ0060   | UZQ0110   | SW Plate            | E7       | 64         | Non Use   | BKQ0009   | Pin Plug Cord              |
| A4     | 27         | SPQ0027   | SPQ0042   | SW Plate (UQ)       | B5       | 65         | -----     | -----     | Lug                        |
|        |            | -----     | -----     | Micro SW Ass'y      | B5       | 66         | -----     | -----     | UL Tube                    |
| A3, C5 | 28         | SPQ0042   | -----     | Micro SW Ass'y (UQ) | A2       | 67         | UTQ0002   | UTQ0002   | Trans Column               |
| A4     | 29         | BUQ0005   | Non Use   | Wire Fastener       | A1       | 68         | UZQ0111   | UZQ0111   | Trans Rubber               |
|        |            | Bush      |           |                     |          |            |           |           |                            |

# Control PCB(1) Parts List



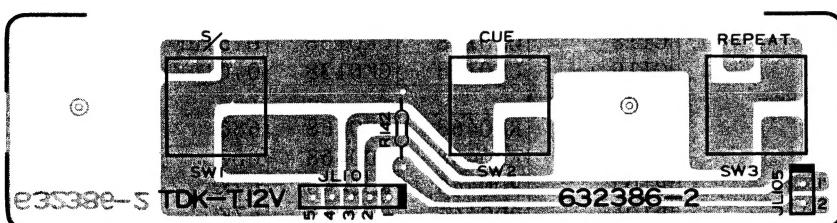
| Symbol No           | PD-291 Stock No | PX-100 Stock No | Description   |
|---------------------|-----------------|-----------------|---------------|
| <b>(Transistor)</b> |                 |                 |               |
| X101                | TRQ5016         | TRQ5016         | 2SD882 Q,P,E  |
|                     | TRQ5010         | TRQ5010         | or 2SD612 E,F |
| X102                | TR0256          | TR0256          | 2SB772 Q,P,E  |
|                     | TRQ3020         | TRQ3020         | or 2SB632 E,F |
| X103                | TR0194          | TR0194          | 2SD667 C,D    |
| X104                | TR0195          | TR0195          | 2SB647 C,D    |
| X105                | TR0194          | TR0194          | 2SD667 C,D    |
| X106                | TR0194          | TR0194          | 2SD667 C,D    |
| X107                | TR0029          | TR0029          | 2SC945 P,Q,K  |
|                     | TR0198          | TR0198          | or 2SC1815    |
| X108                | TR0029          | TR0029          | 2SC945 P,Q,K  |
|                     | TR0198          | TR0198          | or 2SC1815    |
| X109                | TR0029          | TR0029          | 2SC945 P,Q,K  |
|                     | TR0198          | TR0198          | or 2SC1815    |
| X110                | TR0029          | TR0029          | 2SC945 P,Q,K  |
|                     | TR0198          | TR0198          | or 2SC1815    |
| X111                | Non Use         | TR0043          | 2SA733 Q,P    |
|                     |                 | TR0087          | or 2SA1015    |
| X112                | Non Use         | TR0043          | 2SA733 Q,P    |
|                     |                 | TR0087          | or 2SA1015    |
| X123                | TR0029          | TR0029          | 2SC945 P,Q,K  |
|                     | TR0198          | TR0198          | or 2SC1815    |

| Symbol No             | PD-291 Stock No | PX-100 Stock No | Description  |
|-----------------------|-----------------|-----------------|--------------|
| <b>(IC)</b>           |                 |                 |              |
| IC101                 | TCQ0040         | TCQ0040         | MP1001       |
| IC102                 | TCQ0067         | TCQ0067         | TC4066BP     |
|                       | TCQ0068         | TCQ0068         | or HD14066BP |
|                       | TCQ0069         | TCQ0069         | or uPD4066BC |
| IC103                 | TC5006          | TC5006          | uPC4558C     |
|                       | TC5002          | TC5002          | or NJM4558D  |
| IC104                 | TCQ0070         | TCQ0070         | uPD4081BC    |
|                       | TCQ0071         | TCQ0071         | or MSM4081RS |
|                       | TCQ0072         | TCQ0072         | or HD14081BP |
|                       | TC5023          | TC5023          | or TC4081BP  |
| IC105                 | TCQ0045         | TCQ0045         | uPD4001BC    |
|                       | TCQ0073         | TCQ0073         | or MSM4001RS |
|                       | TCQ0074         | TCQ0074         | or HD14001BP |
|                       | TC5004          | TC5004          | or TC4001BP  |
| <b>(Bridge Diode)</b> |                 |                 |              |
| BD101                 | TDQ0520         | TDQ0520         | RB151        |
| BD102                 | TDQ0520         | TDQ0520         | RB151        |
| <b>(Zener Diode)</b>  |                 |                 |              |
| ZD101                 | TD5011          | TD5011          | RD5.6 EB2    |
|                       | TDQ0223         | TDQ0223         | or HZ6A-3    |
| ZD102                 | TD5011          | TD5011          | RD5.6 EB2    |
|                       | TDQ0223         | TDQ0223         | or HZ6A-3    |

| Symbol No                    | PD-291 Stock No | PX-100 Stock No | Description      |    |  | Symbol No | PD-291 Stock No | PX-100 Stock No | Description |      |    |
|------------------------------|-----------------|-----------------|------------------|----|--|-----------|-----------------|-----------------|-------------|------|----|
| <b>(Diode)</b>               |                 |                 |                  |    |  |           |                 |                 |             |      |    |
| D101                         | TDQ0521         | TDQ0521         | 1S1887           |    |  | C111      | CE0817          | CE0817          | 10uF        | 16V  | E1 |
|                              | TDQ0522         | TDQ0522         | or F14C          |    |  | C112      | Non Use         | CE0850          | 1uF         | 50V  | E1 |
|                              | TDQ0536         | TDQ0536         | or EM-1          |    |  | C113      | Non Use         | CE0850          | 1uF         | 50V  | E1 |
| D102                         | TDQ0521         | TDQ0521         | 1S1887           |    |  | C114      | Non Use         | CE0817          | 10uF        | 16V  | E1 |
|                              | TDQ0522         | TDQ0522         | or F14C          |    |  | C115      | CE0850          | CE0850          | 1uF         | 50V  | E1 |
|                              | TDQ0536         | TDQ0536         | or EM-1          |    |  | C116      | CK0142          | CK0142          | 0.1uF       |      | Ce |
| D103                         | TDQ0537         | TDQ0537         | 1SS53            |    |  | C117      | CK0138          | CK0138          | 0.01uF      |      | Ce |
|                              | TD5012          | TD5012          | or 1S953         |    |  | C118      | CK0138          | CK0138          | 0.01uF      |      | Ce |
|                              | TD#0003         | TD#0003         | or 1S1588        |    |  | C119      | CK0138          | CK0138          | 0.01uF      |      | Ce |
| <b>(Resistor)</b>            |                 |                 |                  |    |  |           |                 |                 |             |      |    |
| D104                         | TDQ0537         | TDQ0537         | 1SS53            |    |  | R101      | RD0468          | RD0468          | 680         | 1/2W | Rd |
|                              | TD5012          | TD5012          | or 1S953         |    |  | R102      | RD0468          | RD0468          | 680         | 1/2W | Rd |
|                              | TD#003          | TD#003          | or 1S1588        |    |  | R103      | RD0446          | RD0446          | 47K         | 1/4W | Rd |
| D105                         | TDQ0537         | TDQ0537         | 1SS53            |    |  | R104      | RD0446          | RD0446          | 47K         | 1/4W | Rd |
|                              | TD5012          | TD5012          | or 1S953         |    |  | R105      | RD0474          | RD0474          | 220         | 1/4W | Rd |
|                              | TD#003          | TD#003          | or 1S1588        |    |  | R106      | RD0454          | RD0454          | 10K         | 1/4W | Rd |
| D106                         | TDQ0537         | TDQ0537         | 1SS53            |    |  | R107      | RD0462          | RD0462          | 2.2K        | 1/4W | Rd |
|                              | TD5012          | TD5012          | or 1S953         |    |  | R108      | RD0466          | RD0466          | 1K          | 1/4W | Rd |
|                              | TD#003          | TD#003          | or 1S1588        |    |  | R109      | RD0450          | RD0450          | 22K         | 1/4W | Rd |
| D107                         | TDQ0537         | TDQ0537         | 1SS53            |    |  | R110      | RD0450          | RD0450          | 22K         | 1/4W | Rd |
|                              | TD5012          | TD5012          | or 1S953         |    |  | R111      | RD0466          | RD0466          | 1K          | 1/4W | Rd |
|                              | TD#003          | TD#003          | or 1S1588        |    |  | R112      | RD0456          | RD0456          | 6.8K        | 1/4W | Rd |
| D108                         | TDQ0537         | TDQ0537         | 1SS53            |    |  | R113      | RD0430          | RD0430          | 1M          | 1/4W | Rd |
|                              | TD5012          | TD5012          | or 1S953         |    |  | R114      | RD0462          | RD0462          | 2.2K        | 1/4W | Rd |
|                              | TD#003          | TD#003          | or 1S1588        |    |  | R115      | RD0450          | RD0450          | 22K         | 1/4W | Rd |
| D109                         | Non Use         | TDQ0537         | 1SS53            |    |  | R116      | RD0450          | RD0450          | 22K         | 1/4W | Rd |
|                              |                 | TD5012          | or 1S953         |    |  | R117      | RD0462          | RD0462          | 22K         | 1/4W | Rd |
|                              |                 | TD#003          | or 1S1588        |    |  | R118      | RD0446          | RD0446          | 47K         | 1/4W | Rd |
| D110                         | Non Use         | TDQ0537         | 1SS53            |    |  | R119      | RD0458          | RD0458          | 4.7K        | 1/4W | Rd |
|                              |                 | TD5012          | or 1S953         |    |  | R120      | RD0446          | RD0446          | 47K         | 1/4W | Rd |
|                              |                 | TD#003          | or 1S1588        |    |  | R121      | RD0450          | RD0450          | 22K         | 1/4W | Rd |
|                              |                 |                 |                  |    |  | R122      | RD0450          | RD0450          | 22K         | 1/4W | Rd |
| <b>(Fuse)</b>                |                 |                 |                  |    |  |           |                 |                 |             |      |    |
| Fuse101                      | BF0205          | -----           | T400mA-250V      |    |  | R123      | RD0450          | RD0450          | 22K         | 1/4W | Rd |
|                              | BF0075          | BF0075          | 1A-250V (UC, UQ) |    |  | R124      | RD0434          | RD0434          | 470K        | 1/4W | Rd |
| Fuse102                      | BF0206          | -----           | T500mA-250V      |    |  | R125      | RD0434          | RD0434          | 470K        | 1/4W | Rd |
| Fuse103                      | BF0075          | BF0075          | 1A-250V (UC, UQ) |    |  | R126      | RD0434          | RD0434          | 470K        | 1/4W | Rd |
|                              | BF0206          | -----           | T500mA-250V      |    |  | R127      | RD0472          | RD0472          | 330         | 1/4W | Rd |
|                              | BF0075          | BF0075          | 1A-250V (UC, UQ) |    |  | R128      | RD0450          | RD0450          | 22K         | 1/4W | Rd |
| <b>(Semi-Fixed Resistor)</b> |                 |                 |                  |    |  |           |                 |                 |             |      |    |
| VR101                        | RTQ0024         | RTQ0024         | 10K              |    |  | R129      | RD0450          | RD0450          | 22K         | 1/4W | Rd |
| VR102                        | RTQ0025         | RTQ0025         | 5K               |    |  | R133      | RD0450          | RD0450          | 22K         | 1/4W | Rd |
| <b>(Coil)</b>                |                 |                 |                  |    |  |           |                 |                 |             |      |    |
| L101                         | LAQ0028         | LAQ0028         | BD 509           |    |  | R141      | RD0454          | RD0454          | 10K         | 1/4W | Rd |
| <b>(Capacitor)</b>           |                 |                 |                  |    |  |           |                 |                 |             |      |    |
| C101                         | CE0847          | CE0847          | 1000uF 35V       | E1 |  | R143      | RD0446          | RD0446          | 47K         | 1/4W | Rd |
| C102                         | CE0836          | CE0836          | 1000uF 25V       | E1 |  | R145      | RD0450          | RD0450          | 22K         | 1/4W | Rd |
| C103                         | CE0836          | CE0836          | 1000uF 25V       | E1 |  | R146      | RD0442          | RD0442          | 100K        | 1/4W | Rd |
| C104                         | CE0832          | CE0832          | 100uF 25V        | E1 |  | R147      | RD0456          | RD0456          | 6.8K        | 1/4W | Rd |
| C105                         | CE0832          | CE0832          | 100uF 25V        | E1 |  | R148      | RD0460          | RD0460          | 3.3K        | 1/4W | Rd |
| C106                         | CQ0424          | CQ0424          | 0.1uF 50V        | My |  | R162      | Non Use         | RD0454          | 10K         | 1/4W | Rd |
| C107                         | CEQ0101         | CEQ0101         | 10uF 25V BP      | E1 |  | R163      | Non Use         | RD0454          | 10K         | 1/4W | Rd |
| C108                         | CK0138          | CK0138          | 0.01uF           | Ce |  | R164      | Non Use         | RD0454          | 10K         | 1/4W | Rd |
| C109                         | CK0138          | CK0138          | 0.01uF           | Ce |  | R165      | Non Use         | RD0454          | 10K         | 1/4W | Rd |
| C110                         | CE0853          | CE0853          | 4.7uF 50V        | E1 |  | R167      | RD0454          | RD0454          | 10K         | 1/4W | Rd |
|                              |                 |                 |                  |    |  | R168      | RD0454          | RD0454          | 10K         | 1/4W | Rd |
|                              |                 |                 |                  |    |  | R169      | Non Use         | RD0466          | 1K          | 1/4W | Rd |
|                              |                 |                 |                  |    |  | R170      | Non Use         | RD0466          | 1K          | 1/4W | Rd |

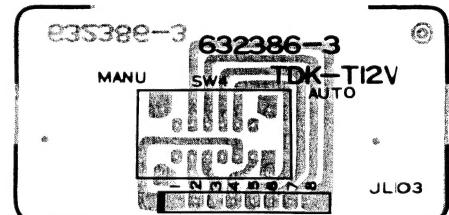
## Control PCB(2)Parts List

| Symbol No         | PD-291<br>Stock No | PX-100<br>Stock No | Description |         |
|-------------------|--------------------|--------------------|-------------|---------|
| <b>(Switch)</b>   |                    |                    |             |         |
| SW1               | SPQ0025            | SPQ0025            | Start/Cut   |         |
| SW2               | SPQ0025            | SPQ0025            | Up/Down     |         |
| SW3               | SPQ0025            | SPQ0025            | Repeat      |         |
| <b>(Resistor)</b> |                    |                    |             |         |
| R142              | RD0043             | RD0043             | 1K          | 1/4W Rd |



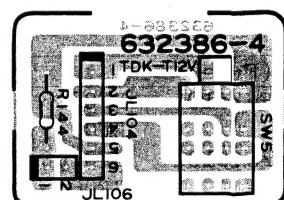
## Control PCB(3)Parts List

| Symbol No             | PD-291<br>Stock No | PX-100<br>Stock No | Description |  |
|-----------------------|--------------------|--------------------|-------------|--|
| <b>(Slide Switch)</b> |                    |                    |             |  |
| SW4                   | SSQ0002            | SSQ0002            | Auto/Manual |  |



## Control PCB(4)Parts List

| Symbol No              | PD-291<br>Stock No | PX-100<br>Stock No | Description |         |
|------------------------|--------------------|--------------------|-------------|---------|
| <b>(Rotary Switch)</b> |                    |                    |             |         |
| SW5                    | SRQ0010            | SRQ0010            | 33/Off/45   |         |
| <b>(Resistor)</b>      |                    |                    |             |         |
| R144                   | RD0048             | RD0048             | 470         | 1/4W Rd |



## Control PCB(5)Parts List

| Symbol No    | PD-291<br>Stock No | PX-100<br>Stock No | Description |          |
|--------------|--------------------|--------------------|-------------|----------|
| <b>(LED)</b> |                    |                    |             |          |
| LD103        | TDQ0021            | TDQ0021            | SWL2310GT   | (Repeat) |



## Control PCB(6)Parts List

| Symbol No    | PD-291<br>Stock No | PX-100<br>Stock No | Description |               |
|--------------|--------------------|--------------------|-------------|---------------|
| <b>(LED)</b> |                    |                    |             |               |
| LD102        | TDQ0021            | TDQ0021            | SEL2310GT   | (Quartz Lock) |



## Control PCB(7)Parts List

| Symbol No | PD-291 Stock No | PX-100 Stock No | Description |
|-----------|-----------------|-----------------|-------------|
| (LED)     |                 |                 |             |
| LD101     | TDQ0022         | TDQ0022         | SEL2110S    |



## Control PCB(8)Parts List

| Symbol No          | PD-291 Stock No | PX-100 Stock No | Description |
|--------------------|-----------------|-----------------|-------------|
| (Photo Transistor) |                 |                 |             |
| X120               | TRQ0008         | TRQ0008         | PN120S      |
| X121               | TRQ0008         | TRQ0008         | PN120S      |
| X122               | TRQ0008         | TRQ0008         | PN120S      |

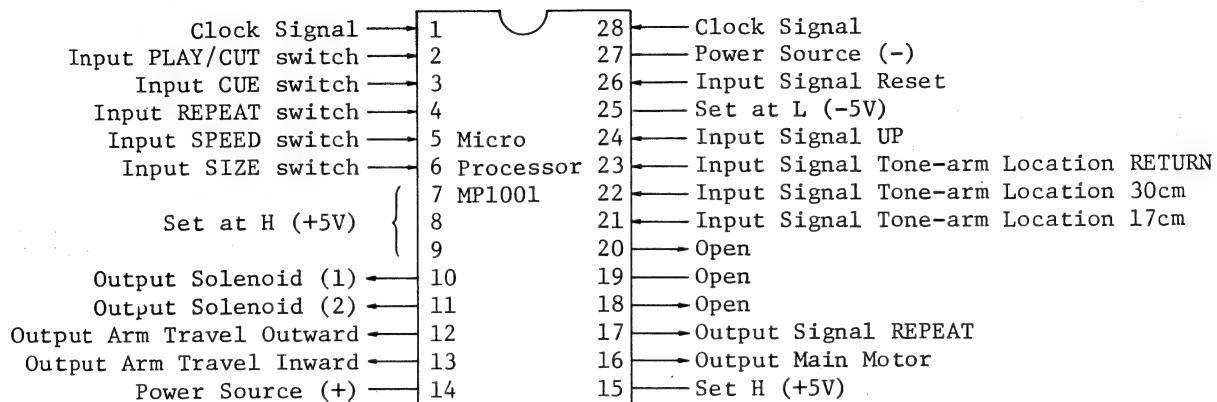


## Destination's Parts List

| Symbol No. | Description          | PD-291     |            |          |                   |          | PX-100   |          |
|------------|----------------------|------------|------------|----------|-------------------|----------|----------|----------|
|            |                      | BK         | AK         | CRAK     | AG                | UQ       | UC       | UQ       |
|            |                      | 220V       | 220V       | 220V     | 240V              | 120V     | 120V     | 120V     |
|            |                      | France etc | Europe etc | France   | England Australia | Canada   | U.S.A.   | Canada   |
| 1          | Cabinet              | WBQ0007    | WBQ0007    | WBQ0007  | WBQ0007           | WBQ0009  | WBQ0009  | WBQ0009  |
| 6          | PU Ass'y             | WZQ0045    | WZQ0045    | WZQ0045A | WZQ0045           | WZQ0045  | WZQ0045  | WZQ0045  |
| 26         | SW, Plate            | UZQ0060    | UZQ0060    | UZQ0060  | UZQ0060           | UZQ0110  | UZQ0110  | UZQ0110  |
| 27         | Micro SW Ass'y       | SPQ0027    | SPQ0027    | SPQ0027  | SPQ0027           | SPQ0042  | SPQ0042  | SPQ0042  |
| 29         | Bush                 | BUQ0005    | BUQ0005    | BUQ0005  | BUQ0005           | BUQ0005  | Non Use  | Non Use  |
| 31         | Insulator Sheet      | UWQ0010    | UWQ0010    | UWQ0010  | UWQ0010           | UWQ0010  | Non Use  | Non Use  |
| 35         | Control Circuit Assy | PCQ0125    | PCQ0125    | PCQ0125  | PCQ0125           | PCQ0136D | PCQ0136D | PCQ0136D |
| 37         | Trans, Assy          | PTQ0022    | PTQ0022    | PTQ0022  | PTQ0022           | PTQ0023  | PTQ0023  | PTQ0023  |
| 40         | AC Cord              | BK0022     | BK0022     | BK0022   | BK0023            | BK0018   | BK0018   | BK0018   |
| 41         | Cord Bushing         | WZQ0046    | WZQ0046    | WZQ0046  | WZQ0046           | WZQ0060  | WZQ0060  | WZQ0060  |
| 50         | Pin Jack Ass'y       | BKQ0010    | BKQ0010    | BKQ0010  | BKQ0010           | BKQ0013  | BKQ0013  | BKQ0013  |
| 50-1       | Pin Jack             | ATQ0111    | ATQ0111    | ATQ0111  | ATQ0111           | ATQ0113  | ATQ0113  | ATQ0113  |
| 52         | Foot                 | WNQ0003    | WNQ0003    | WNQ0003  | WNQ0003           | WNQ0006  | WNQ0006  | WNQ0006  |
| 54         | Flange Tpg.Scr.      | YZQ0132    | YZQ0132    | YZQ0132  | YZQ0132           | YZQ0132  | PCQ0136  | PCQ0136  |
| 55         | Control Circuit Assy | PCQ0121    | PCQ0121    | PCQ0121  | PCQ0121           | PCQ0137  | PCQ0136  | PCQ0136  |
| 55-1       | Control PCB          | PCQ0122    | PCQ0122    | PCQ0122  | PCQ0122           | PCQ0137A | PCQ0136A | PCQ0136A |
| 55-2       | Control PCB          | PCQ0123    | PCQ0123    | PCQ0123  | PCQ0123           | PCQ0137B | PCQ0136B | PCQ0136B |
| 55-3       | Control PCB          | PCQ0124    | PCQ0124    | PCQ0124  | PCQ0124           | PCQ0137C | PCQ0136C | PCQ0136C |
| 55-4       | Control PCB          | PCQ0126    | PCQ0126    | PCQ0126  | PCQ0126           | PCQ0137E | PCQ0136E | PCQ0136E |
| 55-5       | Control PCB          | PCQ0127    | PCQ0127    | PCQ0127  | PCQ0127           | PCQ0137F | PCQ0136F | PCQ0136F |
| 55-6       | Control PCB          | PCQ0128    | PCQ0128    | PCQ0128  | PCQ0128           | PCQ0137G | PCQ0136G | PCQ0136G |
| 55-7       | Control PCB          | PCQ0129    | PCQ0129    | PCQ0129  | PCQ0129           | PCQ0137H | PCQ0136H | PCQ0136H |
| 64         | Pin Plug Cord        | Non Use    | Non Use    | Non Use  | Non Use           | Non Use  | BKQ0009  | BKQ0009  |

# IC Handling Guide

## 1. Pin Location:



All of the terminals are open drain.

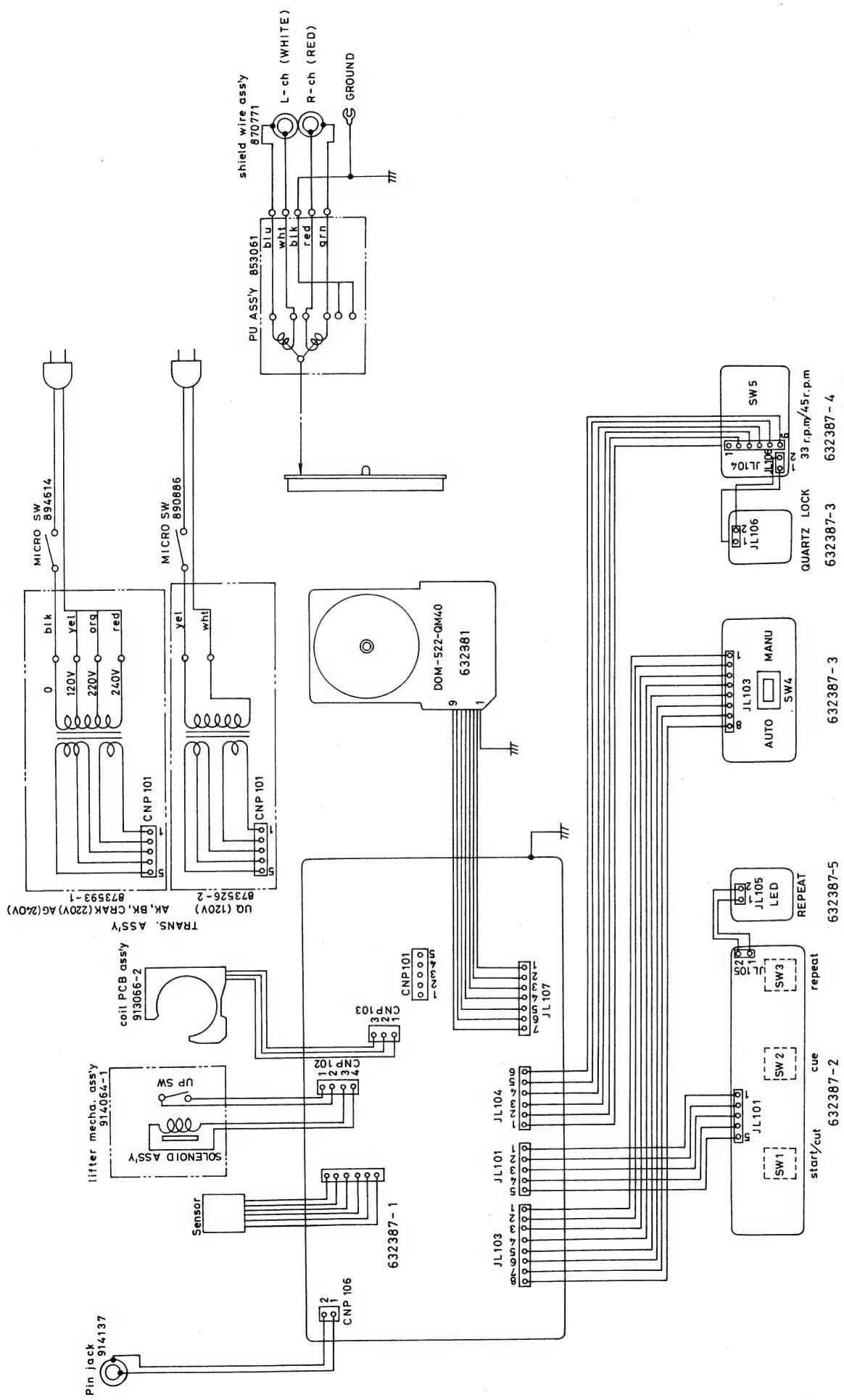
## 2. Function of Pins:

- 1) Clock  
Clock input signal of microprocessor and oscillation frequency is about 400KHz.
- 2) Input, PLAY/CUT switching:  
Input level H (+5V) is accepted as PLAY signal at the rest position, also is accepted as CUT signal at position other than rest.
- 3) Input, CUE switching  
Input H (+5V) signal is accepted at UP, DOWN signal by pressing CUE button.  
But signal is interrupted when tone-arm is at the rest position or in motion.
- 4) Input, REPEAT switching:  
Input H (+5V) is accepted at REPEAT ON, or REPEAT OFF signal by pressing repeat button.
- 5) Input, SPEED switching:  
Input H (+5V) is accepted as speed change signal by pressing speed change button.
- 6) Input, SIZE switching:  
Input H (+5V) is read as 30cm (12") and L (-5V) is read as 17cm (7"), but the signal is accepted only when the tone-arm is traveling from the tone-arm rest to lead-in point to start play.
- 7,8,9) No. 7,8 and 9 are optional pins, not used and set at H (+5V).
- 10) Output (1), Solenoid:  
to feed H (+5V) signal for tone-arm down motion, and is opened for tone-arm up motion.
- 11) Output (2), Solenoid:  
To feed H (+5V) signal for only initial 1 sec, for the tone-arm down motion, and it is opened in other mode.

- 12) Output , Arm Travel Outward:  
To feed H (+5V) signal for outward travel of tone-arm in automatic mode, and also to feed H (+5V) as BRAKE signal to interrupt inward travel of the tone-arm and at tone-arm down motion.
- 13) Output, Arm Travel Inward:  
To feed H (+5V) signal for inward travel of tone-arm in automatic mode, and also to feed H (+5V) as BRAKE signal to interrupt outward travel of the tone-arm and at tone-arm down motion.
- 14) Power Source (+):  
+5V is used as 10V power source.
- 15) No. 15 is optional Pin, not used and the level is set at H (+5V).
- 16) Output, Main Motor ON/OFF:  
To feed H (+5V) signal when PLAY input is applied and the tone-arm is located other than at the rest position.
- 17) Output Signal, REPEAT:  
To feed H (+5V) signal for REPEAT ON, and it is opened for REPEAT OFF.
- 18) No. 18 is optional pin, not used and opened.
- 19) No. 19 is optional pin, not used and opened.
- 20) No. 20 is optional pin, not used and opened.
- 21,22,23) Input signal, Tone-arm Location:  
Same function as 2-1).
- 24) Input Signal, UP:  
To read completion of tone-arm lift motion by H (+5V) input signal.
- 25) No. 25 is optional pin, not used and set at L (-5V).
- 26) Input Signal, Reset:  
To recover output signal to initial level by H (+5V) input signal.  
To reset all modes to initial mode by input signal of H (+5V).  
Initial mode means that the tone-arm is located at the rest position and speed is 33rpm.
- 27) Power Source (-):  
+5V is used as 10V power source.
- 28) Clock Signal:  
Clock input signal of microprocessor and oscillation frequency is about 400Hz.

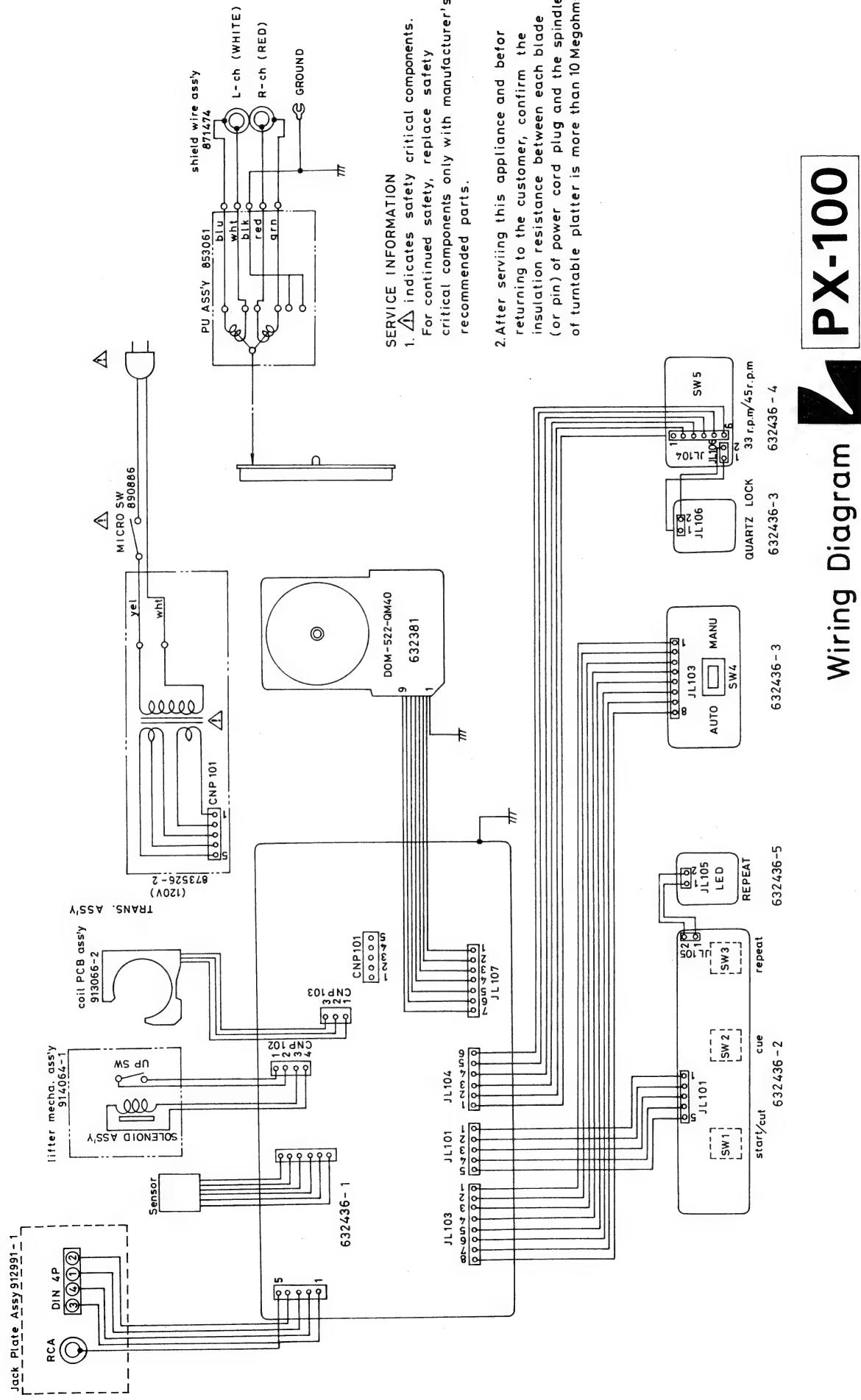
### 3. Rating:

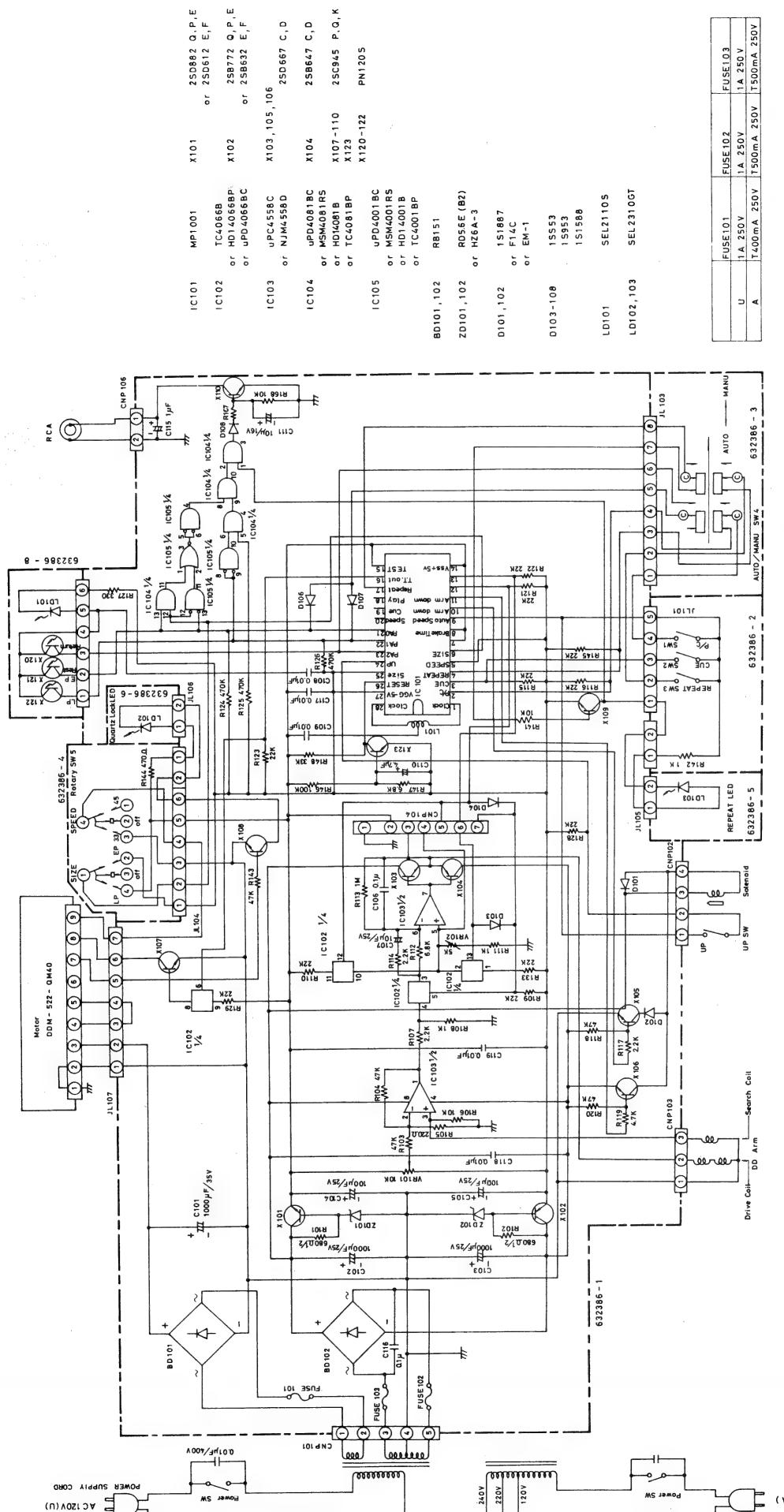
|                  |   |
|------------------|---|
| Power Source:    | 10V <u>±</u> 10%  |
| Input Terminal:  | H... 8V or More<br>L... 5.7V or less                                      |
| Output Terminal: | Open drain, but provides additional PULL-DOWN resistors to the terminals. |



**PD-291**

Wiring Diagram

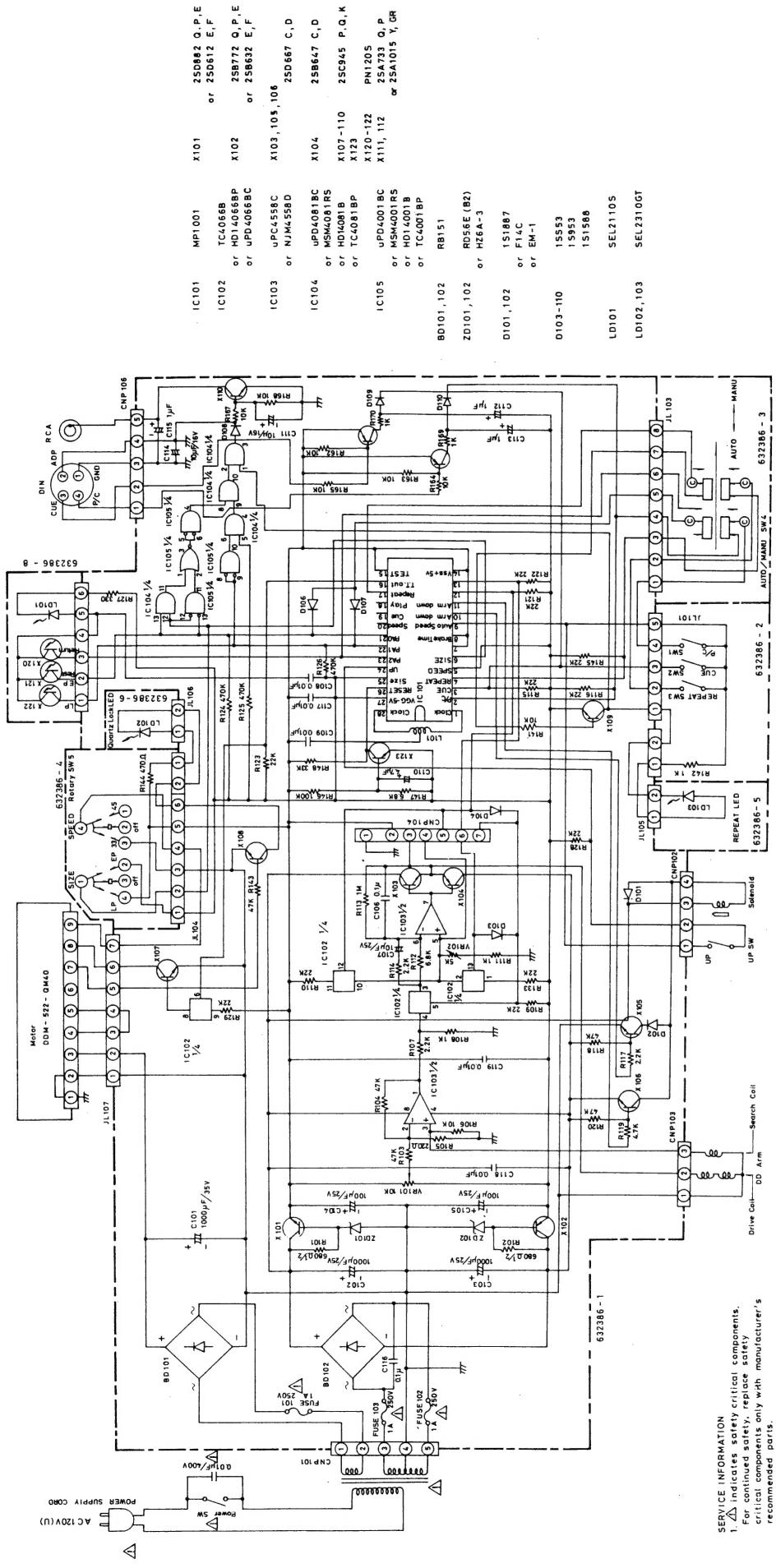




**Remarks:** Unless otherwise specified, all resistors are in OHM. Unless otherwise specified, all capacitors are uF/V.

**PX-100**

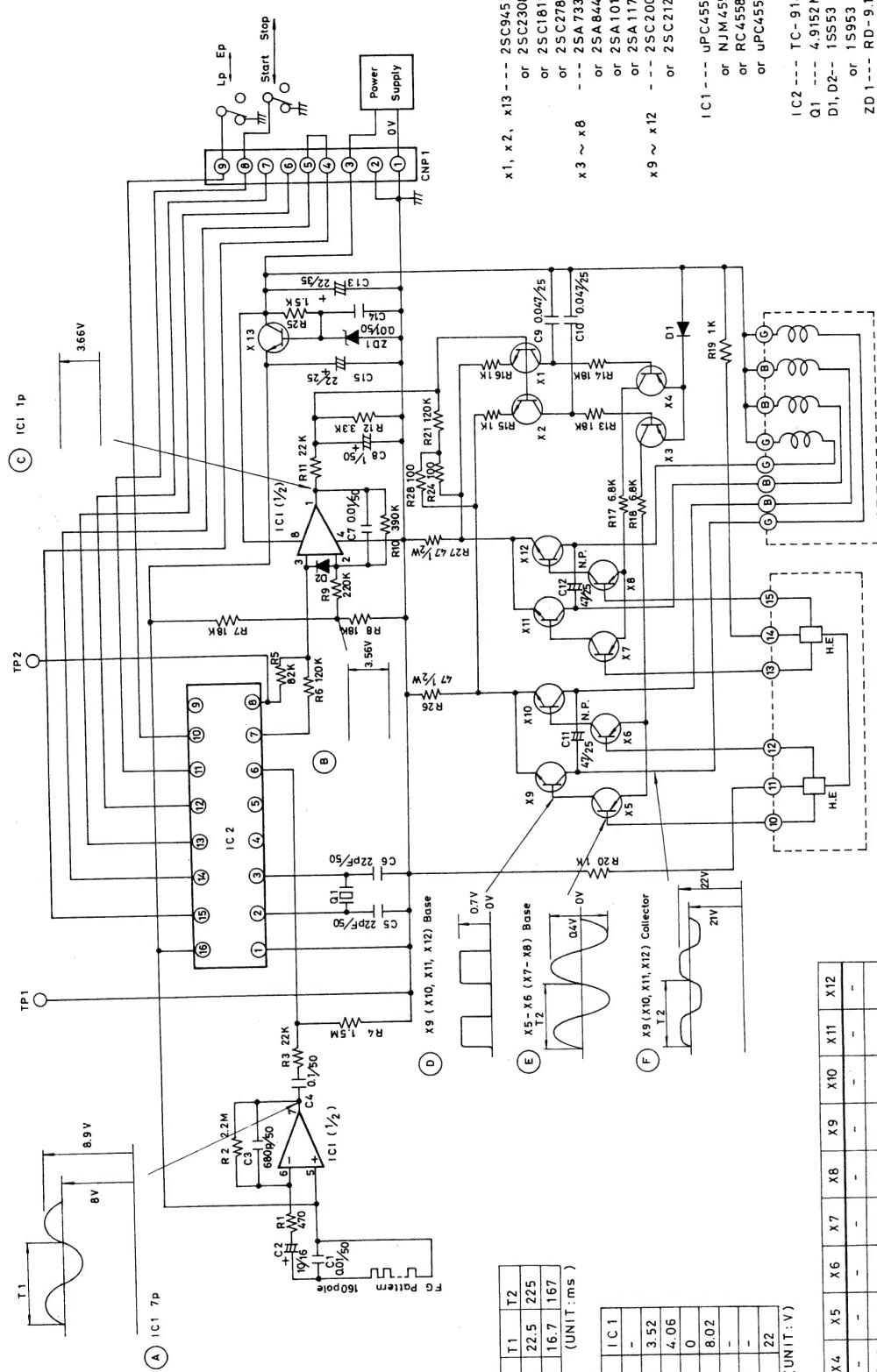
Schematic Diagram



**SERVICING INFORMATION**  
1.  indicates safety critical components. For continued safety, replace safety critical components only with manufacturer recommended parts.

Remarks: Unless otherwise specified, all resistors are in OHM.  
Unless otherwise specified, all capacitors are uF/V.

2. After serving this appliance and before returning to the customer, confirm the insulation resistance between each blade (or pin) of power cord plug and the spindle of turntable platter is more than 10 Megohms.



PD-291, PX-100

Motor Circuit

Remarks: Unless otherwise specified, all resistors are in OHM.  
Unless otherwise specified, all capacitors are uF/V.

| Pin | No.  | IC2     |            |
|-----|------|---------|------------|
| 1   | 0    |         |            |
| 2   | -    |         |            |
| 3   | -    |         |            |
| 4   | 8.02 | T1      | T2         |
| 5   | 8.02 | Lp      | 225        |
| 6   | -    | Ep      | 16.7 167   |
| 7   | 3.58 |         | (UNIT: ms) |
| 8   | 4.1  |         |            |
| 9   | 0    | Pin No. | IC 1       |
| 10  | 0    | 1       | -          |
| 11  | 0    | 2       | 3.52       |
| 12  | 8.02 | 3       | 4.06       |
| 13  | -    | 4       | 0          |
| 14  | -    | 5       | 8.02       |
| 15  | -    | 6       | -          |
| 16  | 8.02 | 7       | -          |
|     |      | 8       | (UNIT: v)  |

IC2 --- TC-9142P  
 Q1 --- 4.9152 MHZ  
 D1, D2--- 15553  
 or 15953  
 ZD 1 --- RD-9.1E (B1)

# Specifications

## [PHONO MOTOR SECTION]

|                    |   |
|--------------------|---|
| Drive System:      | Direct Drive System   |
| Motor:             | Brushless & Slotless DC Servo Quartz Locked Motor               |
| Turntable Platter: | 30cm Aluminum Die-Cast<br>(weight 1.6kgs including platter mat) |
| Rotation:          | 33-1/3rpm, 45rpm (2-Speed)                                      |
| S/N Ratio:         | Better Than 70dB (DIN-B)  |
| Wow & Flutter:     | No More Than 0.03% W.R.M.S.                                     |

## [TONEARM SECTION]

|                   |                                     |
|-------------------|-------------------------------------|
| Tonearm:          | Straight Arm of Static Balance Type |
| Effective Length: | 214mm                               |
| Tracking Error:   | +3 02°, -1 34°                      |
| Overhang:         | 15mm                                |
| Cartridge Weight: | 4g-10.5g                            |
| Stylus Pressure:  | 0-3g (Direct Reading)               |
| Accessories:      | Anti-Skate Adjustment               |

## [ADDITIONAL FEATURES]

|                       |   |
|-----------------------|---|
| Dust Cover:           | Detachable with semi-free-stop hinge                        |
| Quartz-Lock Indicator |   |
| Automatic Function:   | Auto-Lead-In (Auto Start), Auto-Repeat,<br>Start/Cut Button |

## [GENERAL]

|                    |  |
|--------------------|--|
| Power Consumption: | 9W   |
| Dimensions:        | 440(W)x148(H)x360(D)mm<br>(17.6")x(5.9")x(14.4") |
| Weight:            | Net 6.5kg (14.3lbs)<br>Gross 8kg (17.6lbs)       |

Specifications and appearance design subject to change without notice.

PD291/PX100



**LUX CORPORATION, JAPAN**

1-1, 1-CHOME, SHINSENRINISHIMACHI, TOYONAKA-SHI, OSAKA 565  
PHONE 06-834-0004 CABLE LUXMAN TOYONAKA TELEX 5287106 LUXELE J